

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of generating class models of semantically classifiable data of known classes, comprising the steps of:

for each known class:

extracting a plurality of sets of characteristic feature vectors from respective portions of a training set of semantically classifiable data of one of the known classes; and

combining the plurality of sets of characteristic features into a respective plurality of  $N$ -dimensional feature vectors specific to the known class;

wherein respective pluralities of  $N$ -dimensional feature vectors are thus obtained for each known class ; the method further comprising:

analysing the pluralities of  $N$ -dimensional feature vectors for each known class to generate a set of  $M$  basis vectors, each being of  $N$ -dimensions, wherein  $M \ll N$  ; and

for any particular one of the known classes:

using the set of  $M$  basis vectors, mapping each  $N$ -dimensional feature vector relating to the particular one of the known classes into a respective  $M$ -dimensional feature vector; and

using the  $M$ -dimensional feature vectors thus obtained as the basis for or as input to train a class model of the particular one of the known classes; and

storing the class model for use in classifying input data that matches the particular one of the known classes.

2. (Currently Amended) A method of identifying the semantic class of a set of semantically classifiable data, comprising the steps of:

extracting a plurality of sets of characteristic feature vectors from respective portions of the set of semantically classifiable data;

combining the plurality of sets of characteristic features into a respective plurality of  $N$ -dimensional feature vectors;

mapping each  $N$ -dimensional feature vector to a respective  $M$ -dimensional feature vector, using a set of  $M$  basis vectors previously stored, wherein  $M \ll N$ ;

comparing the  $M$ -dimensional feature vectors with stored class models respectively corresponding to previously identified semantic classes of data; and

identifying as the semantic class that class which corresponds to the class model which most matched the  $M$ -dimensional feature vectors; and

classifying input data in the semantic class that exhibit the  $M$ -dimensional feature vectors.

3. (Previously Presented) A method according to claim 1, wherein the set of semantically classifiable data is audio data.

4. (Previously Presented) A method according to claims 1, wherein the set of semantically classifiable data is visual data.

5. (Previously Presented) A method according to claims 1, wherein the set of semantically classifiable data contains audio and visual data.

6. (Previously Presented) A method according to claim 1, wherein the analysing step uses Principal Component Analysis (PCA).

7. (Previously Presented) A method according to claim 1, wherein the analysing step uses Kernel Discriminant Analysis (KDA).

8. (Previously Presented) A method according to claim 1, wherein the combining step further comprises concatenating the respectively extracted characteristic features into the respective  $N$ -dimensional feature vectors.

9. (Currently Amended) A system for generating class models of semantically classifiable data of known classes, comprising:

feature extraction means for extracting a plurality of sets of characteristic feature vectors from respective portions of a training set of semantically classifiable data of one of the known classes; and

feature combining means for combining the plurality of sets of characteristic features into a respective plurality of  $N$ -dimensional feature vectors specific to the known class;

the feature extraction means and the feature combining means being repeatably operable for each known class, wherein respective pluralities of  $N$ -dimensional feature vectors are thus obtained for each known class;

the system further comprising:

processing means arranged in operation to:

analyse the pluralities of  $N$ -dimensional feature vectors for each known class to generate a set of  $M$  basis vectors, each being of  $N$ -dimensions, wherein  $M \ll N$ ; and

for any particular one of the known classes:

use the set of  $M$  basis vectors, map each  $N$ -dimensional feature vector relating to the particular one of the known classes into a respective  $M$ -dimensional feature vector; and

use the  $M$ -dimensional feature vectors thus obtained as the basis for or as input to train a class model of the particular one of the known classes; and

storing the class model for classifying input data that matches the particular one of the known classes.

10. (Currently Amended) A system for identifying the semantic class of a set of semantically classifiable data, comprising:

feature extraction means for extracting a plurality of sets of characteristic feature vectors from respective portions of the set of semantically classifiable data;

feature combining means for combining the plurality of sets of characteristic features into a respective plurality of  $N$ -dimensional feature vectors;

storage means for storing class models respectively corresponding to previously identified semantic classes of data; and

processing means for:

mapping each  $N$ -dimensional feature vector to a respective  $M$ -dimensional feature vector, using a set of  $M$  basis vectors previously generated by the third aspect of the invention, wherein  $M \ll N$ ;

comparing the  $M$ -dimensional feature vectors with the stored class models; and

identifying as the semantic class that class which corresponds to the class model which most matched the  $M$ -dimensional feature vectors; and

classifying input data in the semantic class that exhibit the  $M$ -dimensional feature vectors.